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Lead-Based Paint
Risk Assessment Report
Executive Summary
Findings and Recommendations

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Prepared for:

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Lead-based paint risk
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This report has been prepared for the exclusive use of the San Francisco Unified School District as it pertains to their 44 pre-kindergarten and childcare facilities located in San Francisco, California.

Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other industrial hygienists and environmental professionals practicing in this field. No other warranty, express or implied is made as to the professional advice in this report.

Please contact Jason B. Garrison or Butch Reynolds at (510) 685-4053, should you have any questions or comments regarding this report.

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1.0 Introduction and Background

Environmental Science & Engineering, Inc. (ESE) of Concord, California was contracted by the San Francisco Unified School District (SFUSD) to conduct lead-based paint (LBP) risk assessments at 44 pre-kindergarten and childcare facilities. The LBP risk assessments were conducted in accordance with the U.S. Department of Housing and Urban Development (HUD) Guidelines For The Evaluation And Control Of LBP Hazards in Housing dated June, 1995. This report presents a summary of ESE's lead risk assessment findings, recommendations for short term remedial action, and recommendations for in-place management of LBP. Estimated costs associated with completing recommended remedial actions are also included. Detailed site specific information and results can be found in the individual risk assessment reports prepared for each pre-kindergarten or childcare facility.

ESE has prepared three tables which will aid in the planning and efficiency of implementing remedial actions. The following is a description of information which is provided in each table:

- Table 1 is a summary of ESE's dust wipe, soil, and paint chip sample results for all 44 of SFUSD's childcare and pre-kindergarten facilities.

- Table 2 is ESE's estimated costs for lead related interim controls for each childcare/pre-kindergarten facility. Costs include contractor dust clean-up costs, QA/QC dust wipe sampling costs, LBP testing costs, and estimated contractor paint stabilization costs.

- Table 3 is ESE's site specific recommendations for each childcare and pre-kindergarten facility.

In addition, ESE is also providing product information on recommended dust cleaning solutions and coatings which are effective in encapsulation/encasement of LBP surfaces as Appendix A.

2.0 Summary of Risk Assessment Process and Protocol

HUD has developed a risk assessment protocol to identify LBP hazards and comprehensive LBP In-place Management Strategies to minimize and control lead hazards identified during the risk assessment process. The LBP Risk Assessment process is used to determine the presence or absence of LBP hazards at a particular facility and suggest appropriate lead hazard control options. ESE's risk assessment process involved the following steps:

- Review of site specific data including previous water sampling, soil sampling, and LBP testing conducted by SFUSD, previous LBP abatement work, and future renovation plans.

- Conducting an environmental survey including: Visual inspection of all interior and exterior painted surfaces, collection of paint chip samples from deteriorated painted surfaces, collection of dust wipe samples from floor and window areas, collection of soil samples from bare soil areas, and identifying use patterns of bare soil areas.

- Providing recommendations based on existing data, site survey findings, and analytical results.

NOTE: ESE's workscope did not include water sampling or comprehensive LBP testing as SFUSD has completed significant water testing already and plans to complete comprehensive LBP testing of these facilities in the near future.

3.0 Lead-Based Paint Risk Assessment Findings

The following is brief summary of findings and recommendations for all 44 childcare and pre-kindergarten facilities. Please reference the individual Risk Assessment reports for more detailed information.

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3.1 Lead in Dust

3.1.1 Findings:

Twenty-two of the 44 childcare and pre-kindergarten facilities require some level of dust clean-up due to elevated lead dust concentrations detected during ESE's LBP Risk Assessment. Facilities which were found to contain lead dust concentrations in excess of the HUD lead dust contamination levels of 100 micrograms per square foot ($\mu g/ft^2$) for floors, 500 $\mu g/ft^2$ for window sills, and 800 $\mu g/ft^2$ for window wells/troughs are identified in Table 1.

3.1.2 Recommendations:

In addition to the following recommendations, SFUSD should notify personnel working at these facilities of test results.

- Dust Clean-up: ESE recommends that dust clean-up be completed at all facilities which had elevated lead dust concentrations (See Table 1). Cleaning should be completed by personnel trained to perform this type of work. When cleaning, the trained personnel should follow the procedures for dust clean-up outlined in current HUD guidelines. ESE's estimated costs and recommended schedule for conducting dust clean-up for each site are provided in Table 2. Site specific recommendations for interior lead hazard controls are provided in Table 3.

- Quality Assurance/Quality Control (QA/QC) for Dust Clean-up: To ensure effectiveness of cleaning, ESE recommends conducting a visual inspection of all areas where dust clean-up has been completed. In addition, ESE recommends conducting QA/QC dust wipe sampling in remediated areas to verify the effectiveness of dust clean-up. To minimize laboratory costs, ESE recommends collecting composite dust wipe samples from four rooms at each facility. If less than four rooms are present at a particular facility, composite dust wipe samples should be collected from all available rooms.

Composite dust wipe samples should be collected for like components only. For example, if a facility is in need of window sill, window well/trough, and floor dust clean-up and there are a total of three rooms present, then a total of three composite samples should be collected (one for each component). This does not include blank samples which should be collected at the beginning and end of each sampling period.

Samples should be collected approximately one hour after completion of dust clean-up work. Composite sample locations should be collected at or adjacent to areas the corrective action have taken place and should be taken by an independent third party not involved in the clean-up process. If composite sample results exceed the HUD standards for a particular component, then that particular component should be recleaned and retested throughout the entire facility. Estimated costs associated with conducting QA/QC testing are provided in Table 2.

- Periodic Dust Wipe Sampling: Subsequent to dust clean-up, SFUSD should implement follow-up random wipe sampling in remediated areas. Composite dust wipe sampling should be conducted in the same fashion as mentioned in the above section. Rechecks should be repeated every twelve months until LBP abatement has been completed at a particular facility. Based on the results of the periodic recheck, the recheck frequency period can be increased or decreased as appropriate. If wipe testing results exceed the HUD standards for a particular component, then clean-up and dust wipe sampling should be repeated throughout the facility for that particular component. Estimated costs associated with periodic rechecks for each development are also provided in Table 2.

- Routine Cleaning: Areas which have exhibited excessive results during the risk assessment should be periodically cleaned by maintenance or SFUSD staff. For efficiency, this routine cleaning should be completed during normal housekeeping activities.

Window and/or floor areas which have exhibited elevated results should be cleaned with a detergent solution such as tri sodium phosphate or Leadizolv™ (See Appendix A). Routine cleaning of floor and/or window areas should be completed at a minimum of every six months.

3.2 Lead in Soil

The HUD guidelines, dated 1995 state that the following level of lead in soil should be considered hazardous:

- 2,000 micrograms per gram (μg/g), bare soil in low contact areas (e.g. yard, perimeters).
- 400 μg/g (parts per million [ppm]) bare soil in small high-contact areas (e.g., sandboxes, gardens).

3.2.1 Findings:

Four of the 66 composite soil samples collected exceeded the HUD threshold levels stated above. One additional soil sample collected from the John Muir pre-kindergarten facility contained lead at a concentration of 394 ppm. Although this level is below the 400 ppm level for bare soil in small high-contact areas, it is ESE's opinion that it is close enough to warrant some type of interim control action. The following is a description of all bare soil areas which were found to contain elevated levels of lead and their use patterns:

Facility Name	Location	Use Pattern	Result (ppm)
Cobb CC	Building Foundation, California St.	High-contact area	3,385
John Swett PK[1]	Edge of Parking Lot	low contact area	1,095
John Muir PK[2]	Building Foundation, West Side	high-contact area	394

Facility Name	Location	Use Pattern	Result (ppm)
Martin CC	Planter area south of Room #2	high-contact area	610
Sanchez PK[3]	Building Foundation, West side	low contact area	411

1 = Although this area was determined to be a low contact area, it is ESE's opinion that some type of interim control action is warranted, due to the relatively high result and in view of the Department of Health Services proposed guidelines.

2 = Although the lead concentration was below the 400 ppm standard for small-high contact areas, it is ESE's opinion that it is close enough to warrant interim control action.

3 = Access to this area was observed to be restricted through fencing. In addition, this area is currently being planted with vegetation.

All remaining 61 soil samples contained lead below the 400 ppm and 2,000 ppm HUD threshold levels.

3.2.2 Recommendations:

Please refer to Table 3 for site specific recommendations regarding elevated soil lead levels. In addition to the recommendations specified in Table 3, ESE also recommends that SFUSD notify appropriate facility personnel of elevated test results and restrict children from playing in bare soil areas where elevated results were detected.

Although the HUD guidelines use the standard of 400 ppm and 2,000 ppm as a threshold level of lead in soil, SFUSD should be aware that the Department of Health Services (DHS) is currently developing lead standards which may set a soil lead hazard level of 200 ppm and an abatement level of 1,000 ppm regardless of use patterns. Based on these developing regulations, SFUSD may need to reinterpret soil sample results for each facility.

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3.3 Lead in Drinking Water

3.3.1 Findings:

The SFUSD had previously conducted water sampling at most of their facilities. Based on ESE's review of first and second draw sampling results, 38 facilities require some type of remedial action. Due to low first draw sample results, the following six facilities do not require any remedial action: Martin childcare, Argonne childcare, Drew childcare, Excelsior childcare, McCoppin childcare, and Mahler childcare.

3.3.2 Recommendations:

Please refer to Table 3 for site specific recommendations regarding elevated water samples. In addition to the recommendations specified in Table 3, ESE also recommends that SFUSD notify the appropriate facility personnel of elevated test results.

3.4 Previous LBP Inspections

3.4.1 Findings:

Forty-three (43) of the 44 facilities are in need of some level of LBP testing (Table 2), based on review of previous LBP inspections. The only facility where LBP testing is not required is the Mission childcare facility, due to recent building renovations.

Based on previous LBP surveys and paint chip samples collected by ESE, lead has been detected at levels greater than the HUD guideline of 0.5% lead by weight at 16 of the 44 facilities. LBP was detected at the following facilities: Noriega childcare; Redding childcare; Sunshine Parent/Infant childcare; San Miguel childcare; Yerba Buena childcare; Yoey at Bessie Smith childcare; Burnett childcare; Cooper childcare; Drew childcare; Excelsior childcare; Geary childcare; Mahler childcare; McCoppin childcare; John Mclaren childcare; Cesar Chavez pre-kindergarten; and Stockton pre-kindergarten.

3.4.2 Recommendations:

ESE recommends SFUSD conduct LBP testing of all remaining surfaces which were not previously tested for lead. At minimum, testing should be conducted in accordance with current HUD guidelines, however in view of probable new Department of Health Services (DHS) lead hazard guidelines, a combination of XRF testing and paint chip sampling is recommended. Based on the recently proposed DHS regulation, a lead hazard level of 0.06% lead by weight (600 ppm) may be established in the near future. This new level may require in-place management of painted surfaces which are found to contain lead below the HUD guideline of 0.5% lead by weight. ESE understands SFUSD is planning to complete comprehensive LBP testing at all of it's childcare and pre-kindergarten facilities within the next 6-12 months. Table 2 provides ESE's estimated costs for conducting LBP testing according to HUD guidelines. Table 3 provides site specific recommendations regarding recommended LBP testing. In addition, ESE also recommends that SFUSD notify childcare/pre-kindergarten personnel of which components contain, or are found to contain LBP.

3.5 Paint Conditions

3.5.1 Findings:

Nine of the 44 facilities had deteriorated painted surfaces. Deteriorated painted surfaces were observed at the following facilities: Noriega CC; Sunshine Parent/Infant Childcare; San Miguel Childcare; Cooper Childcare; Geary Childcare; John Mclaren Childcare; Cesar Chavez pre-Kindergarten; Stockton pre-Kindergarten; and Twenty-First pre-Kindergarten; All remaining facilities had painted surfaces which were in fair to good condition.

3.5.2 Recommendations:

- Repair and Repainting: ESE recommends that SFUSD repair and repaint all identified deteriorated painted surfaces. All repair and repainting work should

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be completed in conformance with current HUD guidelines for paint stabilization. The individual risk assessment report for each facility provides a list of deteriorated surfaces and Table 2 provides estimated costs for providing paint stabilization of deteriorated painted surfaces.

Any good quality latex paint applied in accordance with the manufacturer's instructions for surface type, location, use, surface preparation and application specifications should be adequate in coating deteriorated painted surface. In some cases, application of a chemical encapsulating coating may be appropriate to achieve more effective, long lasting results.

For example, ESE has effectively used and recommends coatings produced by Global Encasement, Inc. Global Encasement manufactures several types of primers and coatings which are specifically designed for LBP stabilization and encasement. ESE recommends the use of these products due to increased durability, a 20 year limited warranty on some products, and it's effectiveness on different types of substrate materials. Literature regarding Global Encasement, Inc. products are provided as Appendix A.

- Repainting Policies and Worker Training: Workers who might disturb painted surfaces during maintenance work should be trained, medically qualified, and equipped in accordance with the California Division of Occupational Safety and Health (Cal/OSHA) Construction Standard 8CCR 1532.1 Lead. ESE also recommends that maintenance managers and supervisors who plan and direct LBP related work also be informed or trained in accordance with HUD, DHS, and Cal/OSHA requirements for LBP hazards.

The following LBP hazard controls should be employed when maintenance activities affect LBP surfaces:

- Standard Operating Procedures (SOP's)
- Worker Protection (as appropriate) to include: Training, Medical Surveillance, Respiratory Protection, and Protective Clothing
- Work Area Preparation
- Clean-up Procedures
- Clearance Inspection and/or Testing Procedures

TABLE 1

SUMMARY OF DUST WIPE, SOIL, AND PAINT CHIP SAMPLE RESULTS
SAN FRANCISCO UNIFIED SCHOOL DISTRICT CHILDCARE AND PRE-KINDERGARTEN FACILITIES
ESE PROJECT NUMBER 65-95-059

SITE	CLEAN-UP PRIORITY[1]	FLOORS EXCEEDED[2]	WINDOW SILLS EXCEEDED[2]	WINDOW TROUGHS EXCEEDED[2]	SOILS EXCEEDED[2]	PAINT CHIP SAMPLES EXCEEDED[2,3]
Mission CC	Not Applicable	None	None	None	None	None Collected
Noriega CC	Not Applicable	None	None	None	None	2(50%)
Redding CC	Immediate	None	2(50%)	2(100%)	None Collected	None Collected
Sunshine Parent/Infant CC	Immediate	None	11(79%)	2(100%)	None	15(94%)
San Miguel CC	Immediate	None	None	9(75%)	None	2(67%)
Junipero Serra Annex CC	Not Applicable	None	None	None	None	None Collected
Sunnyside CC	Not Applicable	None	None	None	None Collected	None Collected
Sutro CC	Not Applicable	None	None	None Collected	None	None Collected
Raphael Weill CC	Immediate	1(6%)	1(14%)	6(100%)	None	None Collected
Yerba Buena CC	Immediate	1(4.5%)	None	None	None	None Collected
Yoey at B. Smith CC	Not Applicable	None	None	None Collected	None	None Collected
Argonne CC	Not Applicable	None	None	None	None	None Collected
Bryant CC	Immediate	None	2(100%)	1(100%)	None	None Collected
Burnett CC	Short Term	None	None	1(25%)	None	None Collected
Cobb CC	Immediate	1(33%)	None	None	1(100%)	None Collected
Cooper	Immediate	None	None	5(100%)	None	1(100%)
Drew CC	Immediate	None	2(17%)	None Collected	None	None Collected
Excelsior CC	Short Term	None	1(20%)	None	None	None
Filipino CC	Not Applicable	None	None	None	None	None Collected
Leonard Flynn CC	Not Applicable	None	None	None Collected	None Collected	None Collected
Geary CC	Immediate	None	4(57%)	4(57%)	None	2(100%)
Grattan CC	Short Term	None	None	1(25%)	None	None Collected
Bret Harte CC/PK	Short Term	2(7%)	None	None	None	None Collected
Jefferson CC	Short term	None	None	1(50%)	None	None Collected
Kennedy CC	Short term	None	None	1(50%)	None Collected	None Collected
Las Americas CC	Short Term	None	None	3(60%)	None	None Collected
Mahler CC	Not Applicable	None	None	None	None	None Collected
Martin CC	Immediate	None	None	None Collected	1(50%)	None Collected
McCoppin CC	Not Applicable	None	None	None Collected	None	None Collected
Mclaren CC	Immediate	None	None	6(86%)	None	1(100%)
Mission Annex CC	Not Applicable	None	None	None	None	None Collected

TABLE 1

SUMMARY OF DUST WIPE, SOIL, AND PAINT CHIP SAMPLE RESULTS
SAN FRANCISCO UNIFIED SCHOOL DISTRICT CHILDCARE AND PRE-KINDERGARTEN FACILITIES
ESE PROJECT NUMBER 65-95-059

SITE	CLEANUP PRIORITY[1]	FLOORS EXCEEDED[2]	WINDOW SILLS EXCEEDED[2]	WINDOW TROUGHS EXCEEDED[2]	SOILS EXCEEDED[2]	PAINT CHIP SAMPLES EXCEEDED[2,3]
Buena Vista PK	Not Applicable	None	None Collected	None	None Collected	None Collected
Carmichael PK	Not Applicable	None	None	None	None	None Collected
Cesar Chavez PK	Not Applicable	None	None	None	None Collected	None[3]
Drew PK	Not Applicable	None	None	None Collected	None	None Collected
Golden Gate PK	*Immediate*	*None*	*None*	*1(100%)*	*None*	*None Collected*
John Muir PK	Not Applicable	None	None	None	None	None Collected
Sanchez PK	*Short Term*	*None*	*None*	*1(50%)*	*None*	*None Collected*
Stockton PK	*Immediate*	*1(6%)*	*2(25%)*	*8(100%)*	*None Collected*	*1(50%)*[3]
John Swett PK	*Short Term*	*None*	*None*	*None*	*None*	*None Collected*
Taylor PK	Not Applicable	None	None	None	None	None Collected
Twenty-First PK	*Immediate*	*None*	*None*	*1(100%)*	*None*	*None*[3]
Daniel Webster PK	Not Applicable	None Collected	None	None	None	None Collected

Under construction

NOTES:

1 = Dust clean-up priority for childcare and pre-kindergarten facilities are separated into three categories. ESE recommends that dust clean-up of "immediate" and "short term" sites be completed within 0-6 months and 0-12 months respectively. Dust clean-up of sites which fall into the "Not Applicable" category is not required due to low levels of lead in collected dust and soil samples.

2 = "Exceeded" is defined as the number of samples exceeding the HUD lead contamination limits of 100 µg/ft^2, 500 µg/ft2, and 800 µg/ft2 for floors, window sills, and window troughs respectively. HUD defines excessive lead concentrations in composite soil samples as 2,000 µg/g for bare soil in perimeter and yard samples, and 400 µg/g for bare soil in small, high-contact areas (e.g., sandboxes, gardens). Paint chip samples which contain equal to or greater than 0.5% lead by weight are considered to be lead-based paint under the Lead-Based Paint Poisoning Prevention Act. It should be understood that the definitions of hazardous levels in soils and dust are subject to change at both the federal (EPA) and state (DHS) levels. DHS is proposing hazard levels of 200 ppm for soil and 0.06% lead by weight for paint. The percentage of the total number of samples exceeding the HUD contamination limits for each sample type is also provided to indicate number of samples collected and extent excessive lead level are present.

3 = Although lead concentrations of collected paint chip samples were below the 0.5% lead by weight contamination limit, detectable levels of lead were present in collected samples. The OSHA lead construction standard still applies when these surfaces are being affected by maintenance or renovation activities.

Table 2

Estimated Costs for Lead Related Interim Controls

TABLE 2

ESTIMATED COSTS FOR LEAD RELATED INTERIM CONTROLS
SAN FRANCISCO UNIFIED SCHOOL DISTRICT CHILDCARE AND PRE-KINDERGARTEN FACILITIES
ESE PROJECT NUMBER 65-95-059

SITE	ESTIMATED CONTRACTOR DUST CLEAN-UP COSTS	COSTS FOR QA/QC DUST WIPE SAMPLING	ESTIMATED COSTS FOR LEAD BASED PAINT TESTING[1]	ESTIMATED CONTRACTOR PAINT STABILIZATION COSTS	TOTAL COSTS
Mission CC	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Norlega CC	Not Applicable	Not Applicable	$2,700	$50/window component	$2,700
Redding CC	$3,000	$500	$900	Not Applicable	$4,400
Sunshine Parent/Infant CC	$8,000	$515	$3,600	$150	$12,265
San Miguel CC	$12,000	$470	$5,400	$1,200	$19,070
Junipero Serra Annex CC	Not Applicable	Not Applicable	$1,350	Not Applicable	$1,350
Sunnyside CC	Not Applicable	Not Applicable	$900	Not Applicable	$900
Sutro CC	Not Applicable	Not Applicable	$900	Not Applicable	$900
Raphael Welll CC	$5,000	$515	$1,800	Not Applicable	$7,315
Yerba Buena CC	$1,000	$470	$1,800	Not Applicable	$3,270
Yoey at B. Smith CC	Not Applicable	Not Applicable	$900	Not Applicable	$900
Argonne CC	Not Applicable	Not Applicable	$450	Not Applicable	$450
Bryant CC	$3,000	$515	$450	Not Applicable	$3,965
Burnett CC	$1,000	$470	$1,800	Not Applicable	$3,270
Cobb CC	$1,000	$470	$450	Not Applicable	$1,920
Cooper	$5,000	$470	$2,250	$50/exterior window	$7,720
Drew CC	$2,000	$470	$2,700	Not Applicable	$5,170
Excelsior CC	$1,000	$470	$1,350	Not Applicable	$2,820
Filipino CC	Not Applicable	Not Applicable	$1,350	Not Applicable	$1,350
Leonard Flynn CC	Not Applicable	Not Applicable	$450	Not Applicable	$450
Geary CC	$2,000	$500	$900	$400	$3,800
Grattan CC	$1,000	$470	$900	Not Applicable	$2,370
Bret Harte CC/PK	$3,000	$500	Not Applicable	Not Applicable	$3,500
Jefferson CC	$1,000	$450	$1,350	Not Applicable	$2,800
Kennedy CC	$1,000	$470	$450	Not Applicable	$1,920
Las Americas CC	$6,000	$470	$2,700	Not Applicable	$9,170
Mahler CC	Not Applicable	Not Applicable	$450	Not Applicable	$450
Martin CC	Not Applicable	Not Applicable	$1,350	Not Applicable	$1,350

TABLE 2

ESTIMATED COSTS FOR LEAD RELATED INTERIM CONTROLS
SAN FRANCISCO UNIFIED SCHOOL DISTRICT CHILDCARE AND PRE-KINDERGARTEN FACILITIES
ESE PROJECT NUMBER 65-95-059

SITE	ESTIMATED CONTRACTOR DUST CLEAN-UP COSTS	COSTS FOR QA/QC DUST WIPE SAMPLING	ESTIMATED COSTS FOR LEAD-BASED PAINT TESTING[1]	ESTIMATED CONTRACTOR PAINT STABILIZATION COSTS	TOTAL COSTS
McCoppin CC	Not Applicable	Not Applicable	$1,350	Not Applicable	$1,350
Mclaren CC	$7,000	$470	$3,150	$50/window component	$10,620
Mission Annex CC	Not Applicable	Not Applicable	$450	Not Applicable	$450
Buena Vista PK	Not Applicable	Not Applicable	$450	Not Applicable	$450
Carmichael PK	Not Applicable	Not Applicable	$450	Not Applicable	$450
Cesar Chavez PK	Not Applicable	Not Applicable	$1,350	$50/radiator	$1,350
Drew PK	Not Applicable	Not Applicable	$2,700	Not Applicable	$2,700
Golden Gate PK	$1,000	$470	$450	Not Applicable	$1,920
John Muir PK	Not Applicable	Not Applicable	$450	Not Applicable	$450
Sanchez PK	$1,000	$470	$900	Not Applicable	$2,370
Stockton PK	$9,000	$500	$4,050	$50/component	$13,550
John Swett PK	Not Applicable	Not Applicable	$450	Not Applicable	$450
Taylor PK	Not Applicable	Not Applicable	$900	Not Applicable	$900
Twenty-First PK	$1,000	$470	$450	$50	$1,970
Daniel Webster PK	Not Applicable	Not Applicable	450	Not Applicable	$450
TOTAL COSTS	$76,000	$10,575	$57,600	$1,800	$144,975

NOTE:

1= Estimated cost for LBP testing is based on XRF testing according to HUD guidelines, dated 1995.

TABLE 3

SITE SPECIFIC RECOMMENDATIONS FOR CHILDCARE AND PRE-KINDERGARTEN FACILITIES
SAN FRANCISCO UNIFIED SCHOOL DISTRICT
ESE PROJECT NO. 6595059

SITE	SITE SPECIFIC RECOMMENDATIONS
Mission Childcare	1) Collect a representative number of water samples to verify effectiveness of plumbing renovations.
Norlegs Childcare	1) Repair and repaint deteriorated painted surfaces. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Redding Childcare	1) Conduct dust clean-up of all window sills and window well/window trough areas in room 002. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of untested Childcare areas. 3) Ensure that all drinking water systems which have had elevated second draw results have been removed from service until appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Sunshine Parent/Infant Childcare	1) Conduct dust clean-up of all window sills and window well/window trough areas and repair deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Collect second draw water samples from locations where first draw samples exceeded the EPA action level, and no second draw sample was collected.
San Miguel Childcare	1) Conduct dust clean-up of all window well/window trough areas and repair deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure that all drinking water systems which have had elevated second draw results have been removed from service until appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Junipero Serra Annex Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Conduct comprehensive testing of the facility's water systems.
Sunnyside Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Conduct comprehensive testing of the facility's water systems.
Sutro Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Conduct comprehensive testing of the facility's water systems.
Raphael Weill Childcare	1) Conduct dust clean-up of all window well/window trough areas, all window sills in room #30, and all floor areas in room #107. Collect QA/QC and periodic dust wipe samples. 2) Conduct additional water sampling of the building's water system, ensure that faucets which have had elevated second draw results have been taken out of service, as standard practice. 3) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Yerba Buena Childcare	1) Conduct dust clean-up of all floor areas in room #3. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Collect second draw water samples from locations where first draw samples exceeded the EPA action level, and no second draw sample was collected. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.

TABLE 3

SITE SPECIFIC RECOMMENDATIONS FOR CHILDCARE AND PRE-KINDERGARTEN FACILITIES
SAN FRANCISCO UNIFIED SCHOOL DISTRICT
ESE PROJECT NO. 6595059

SITE	SITE SPECIFIC RECOMMENDATIONS
Yoey at B. Smith Childcare	1) Ensure bare soil areas are sufficiently covered with vegetation or ground cover. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure all faucets with elevated water sample results have been taken out of service. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice. 5) Conduct additional investigations to determine where lead contaminated water might be originating from in the building's water system.
Argonne Childcare	1) Conduct comprehensive LBP testing of Childcare areas.
Bryant Childcare	1) Conduct dust clean-up of all window sill and window well/window trough areas. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Burnett Childcare	1) Conduct dust clean-up of all window well/window trough areas in room #010. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure that the faucet which had the elevated second draw result remains out of service until appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Cobb Childcare	1) Conduct dust clean-up of all window well/window trough areas in room #024. Collect QA/QC and periodic dust wipe samples. 2) Install and maintain suitable groundcover on bare soil areas along the building foundation adjacent to California Street. Periodically inspect groundcover conditions to ensure that bare soil areas are being adequately covered. Notify the childcare facility that bare soil areas should be avoided by children. 3) Conduct comprehensive LBP testing of Childcare areas. 4) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Cooper Childcare	1) Conduct dust clean-up of all window well/window trough areas and repair deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure that the faucet which was secured by SFUSD remains out of service until second draw sampling indicates use is acceptable and/or appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Drew Childcare	1) Conduct dust clean-up of all window sill areas in rooms #4 and #5. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas.
Excelsior Childcare	1) Conduct dust clean-up of all window sill areas in room #2. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas.
Filipino Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Ensure that the faucet which was secured by SFUSD remains out of service until second draw sampling indicates use is acceptable and/or appropriate remedial actions can be implemented. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks

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SITE	SITE SPECIFIC RECOMMENDATIONS
Leonard Flynn Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Ensure that all faucets where elevated first draw samples were detected are put on a flushing routine. Locations where elevated first draw samples were detected, but no second draw samples were collected should be removed from service until second draw sampling has occurred and/or appropriate remedial actions can be implemented. 3) Flush all building water systems used for drinking after long periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Geary Childcare	1) Conduct dust clean-up of all window sill and window well/window trough areas and repair and repaint deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Repair and repaint all deteriorated painted surfaces. 4) Conduct additional investigations to determine where lead contaminated water might be originating from in the building's water system. 5) Ensure that all faucets which had elevated levels of lead are taken out of, and remain out of service until appropriate remedial actions can be implemented. 6) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice. and vacation breaks as standard practice.
Grattan Childcare	1) Conduct dust clean-up of all window well/window trough areas in room #104. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure that the faucet where the elevated first draw water sample was detected has been taken out of, and remains out of service until additional second second draw sampling indicates use is acceptable and/or appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Bret Harte Childcare/ Pre-kindergarten	1) Conduct dust clean-up of all floor areas in the childcare facility. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Ensure that all faucets which have been secured by SFUSD remain out of service until second draw sampling indicates use is acceptable and/or appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacations as standard practice.
Jefferson Childcare	1) Conduct dust clean-up of all window well/window trough areas in the bungalow. Collect QA/QC and periodic dust wipe samples. 2) Re-sample all faucets 2) Re-sample all faucets which have undergone plumbing renovation to determine whether lead concentrations have been adequately reduced from these locations. 3) Remove from service all faucets which have undergone plumbing renovation to determine whether lead concentrations have been adequately reduced from these locations. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacations as standard practice.

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SAN FRANCISCO UNIFIED SCHOOL DISTRICT
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SITE	SITE SPECIFIC RECOMMENDATIONS
Kennedy Childcare	1) Conduct dust clean-up of all window well/window trough areas in all childcare rooms. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) The faucet which had the elevated first draw sample result should be taken out of service until second draw sampling has been completed and/or appropriate remedial actions can be implemented. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacations as standard practice.
Las Americas Childcare	1) Conduct dust clean-up of all window well/window trough areas. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Flush all building water systems used for drinking after periods of non-use, such as weekends, holidays, and vacation breaks as standard practice.
Mahler Childcare	1) Conduct comprehensive LBP testing of Childcare areas.
Martin Childcare	1) Install and maintain suitable groundcover on bare soil areas within the planter. The condition of the ground cover should be periodically inspected to ensure that bare soil areas are being adequately covered. 2) The childcare facility should be notified that bare soil areas inside the planter should be avoided by children. 3) Conduct comprehensive LBP testing of Childcare areas.
McCoppin Childcare	1) Conduct comprehensive LBP testing of Childcare areas.
Mclaren Childcare	1) Conduct dust clean-up of all window well/window trough areas in all childcare rooms and repair and repaint deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Childcare areas. 3) Re-sample the two faucets where second draw water sample results exceeded first draw water sample results. 4) Conduct additional investigations to determine where the lead contaminated water might be originating from in the building's water system. 5) Ensure that all which have been removed from service remain out of service until appropriate remedial actions can be implemented. 6) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Mission Annex Childcare	1) Conduct comprehensive LBP testing of Childcare areas. 2) Conduct additional investigations to determine where the lead contaminated water might be originating from in the building's water system.
Buena Vista Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Carmichael Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas. 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Cesar Chavez Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas. 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.

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SITE	SITE SPECIFIC RECOMMENDATIONS
Drew Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas. 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Golden Gate Pre-kindergarten	1) Conduct dust clean-up of all window well/window trough areas in all pre-kindergarten rooms. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Pre-kindergarten areas. 3) Conduct an investigation of the building's water system. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
John Muir Pre-kindergarten	1) Install and maintain suitable groundcover, or at minimum re-sample bare soil areas along the building foundation of the pre-kindergarten facility. Inform the Pre-kindergarten facility of testing results, and recommend that children not play in this bare soil area. 2) Conduct comprehensive LBP testing of Pre-kindergarten areas. 3) Conduct an investigation of the building's water system. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Sanchez Pre-kindergarten	1) Conduct dust clean-up of all window well/window trough areas in all pre-k rooms. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Pre-kindergarten areas. 3) Conduct an investigation of the building's water system. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Stockton Pre-kindergarten	1) Conduct dust clean-up of all window well/window trough areas in all pre-kindergarten rooms and repair and repaint deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Pre-kindergarten areas. 3) Conduct an investigation of the building's water system. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
John Swett Pre-kindergarten	1) Install and maintain suitable groundcover on bare soil areas along the building foundation adjacent to California Street. Periodically monitor groundcover condition to ensure bare soil areas are being adequately covered. 2) The Pre-kindergarten facility should be notified that bare soil areas along the border of the parking lot should be off limits for play by children. 3) Conduct comprehensive LBP testing of of Pre-kindergarten areas. 4) Conduct an investigation of the building's water system. 5) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Taylor Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas. 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.

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SITE	SITE SPECIFIC RECOMMENDATIONS
Twenty-First Pre-kindergarten	1) Conduct dust clean-up of all window well/window trough areas in all pre-kindergarten rooms and repair and repaint deteriorated painted surfaces. Collect QA/QC and periodic dust wipe samples. 2) Conduct comprehensive LBP testing of Pre-kindergarten areas. 3) Conduct an investigation of the building's water system. 4) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.
Daniel Webster Pre-kindergarten	1) Conduct comprehensive LBP testing of Pre-kindergarten areas. 2) Conduct an investigation of the building's water system. 3) Flush all building water systems used for drinking after periods of non-use such as weekends, holidays, and vacation breaks as standard practice.

NOTES:

In almost all cases, water system recommendations are based upon review of water testing data and information provided by the District and compared to applicable guidelines.

LBP = Lead-based paint

QA/QC = Quality Assurance/Quality Control or clearance wipe testing by an independent third party

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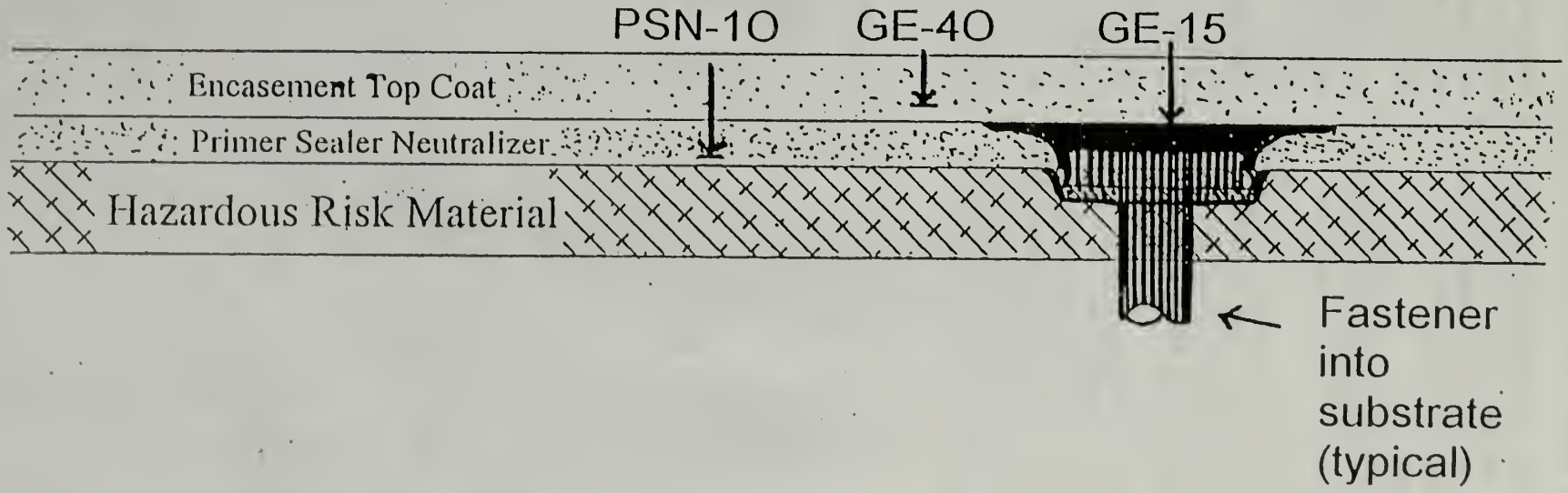
GLOBAL Encasement System

Finished Encasement System safely seals the hazardous risk surface behind a flexible seamless, waterproof durable, highly abuse resistant protective enclosure.



Highly concentrated LEDIZOLV™ removes lead-contaminated dust on any surface—yet it has a mild pH, is phosphate-free and completely biodegradable

THE result of extensive research and development, LEDIZOLV is a liquid, phosphate-free, lead-dissolving, controlled-foam anionic detergent.

LEDIZOLV has outstanding metal-ion solubilizing properties at concentrations as low as 2% even at ambient temperatures.

Although concentrated, LEDIZOLV has a mild pH, excellent health-safety and handling characteristics and is biodegradable and readily disposable.

LEDIZOLV reduces costly clearance-testing failures

Unlike trisodium-phosphate (TSP) detergents, LEDIZOLV is free-rinsing.* While TSP actually *precipitates* lead—it won't solubilize or hold it in solution—LEDIZOLV has been formulated to exhibit very high complexing, sequestering and metallic-ion solubilizing with many divalent and trivalent metallic ions, combined with excellent hard-surface detergency.

As a result, LEDIZOLV helps reduce clearance-testing failures, eliminating additional costs for recleaning and retesting as well as reoccupancy delays.

In addition, LEDIZOLV's zero-phosphate level and near-neutral pH reduce disposal difficulties.

And, as a hard-surface cleaner LEDIZOLV exhibits good wetting, emulsifying, sequestration, chelating, soil deflocculating and rinsing properties—to reduce additional environmental concerns in lead abatement.

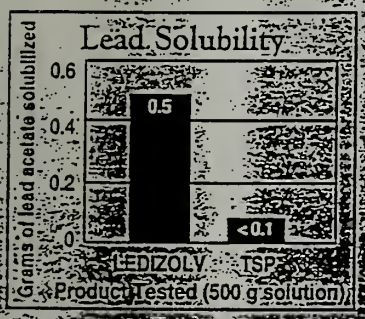
* *TSP is also highly alkaline with a pH over 12, and its residue can drastically decrease the adhesion properties of encapsulants.*

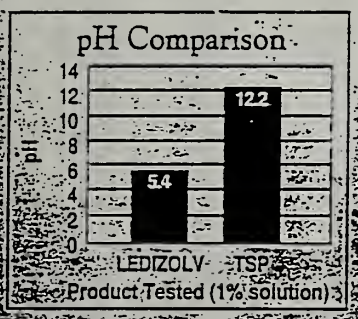
Physical Data

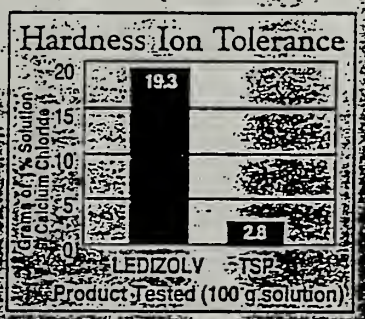
Property	Typical Result
pH (1% in DI water)	5.4
(2% in DI water)	5.4
(as is)	5.3
Surface Tension (1% in DI water)	34.0 dynes/cm.
Phosphate Content	0
Solubility in Water	Complete in all proportions
Specific Gravity	1.080
Biodegradability	Complete

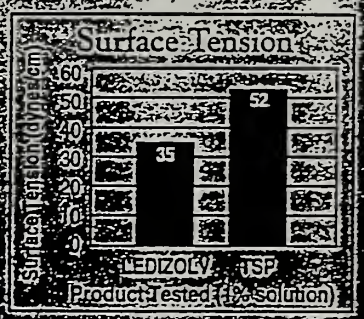
Health Safety Information

OSHA Hazardous Ingredients:	None
Flammability:	Non-Flammable
Oral Toxicity:	No ingredient defined as an oral toxicant by OSHA
Eye Irritation:	Moderate eye irritant
Inhaled Irritant:	Non-Irritating
Carcinogenicity:	No
NTP:	No
IARC:	No
OSHA:	No
National Fire Protection Association 704 Degree of Hazard Labeling	
Fire:	0
Reactivity:	0
Health:	0
Other:	None









Lead Solubility—LEDIZOLV also exhibits a greater capacity to solubilize lead. Other products, in fact, do not solubilize any lead at all, but form an insoluble precipitate—lead phosphate.

pH—At 1% LEDIZOLV has a pH of approximately 5.4, very near the neutral pH of 7. In addition to mildness of product, LEDIZOLV requires fewer adjustments prior to disposal.

Hardness Ion Tolerance—LEDIZOLV has a substantially higher tolerance to calcium ions, areas where hard water is common. LEDIZOLV possesses sufficient water softening properties to maintain its capacity to remove lead even when mixed with hard water.

LEDIZOLV beats all other lead-abatement solutions 50 to 1. Each gallon of highly concentrated, yet biodegradable LEDIZOLV makes 50 gallons of lead dissolving cleaner (2% solution)—making LEDIZOLV the most effective solution for your lead-contaminated dust problem.

Surface Tension—LEDIZOLV has a lower water surface tension effect, thus making water "wetter." This results in a greater ability to penetrate and spread out evenly and thoroughly on a given surface.

For more information call or write:

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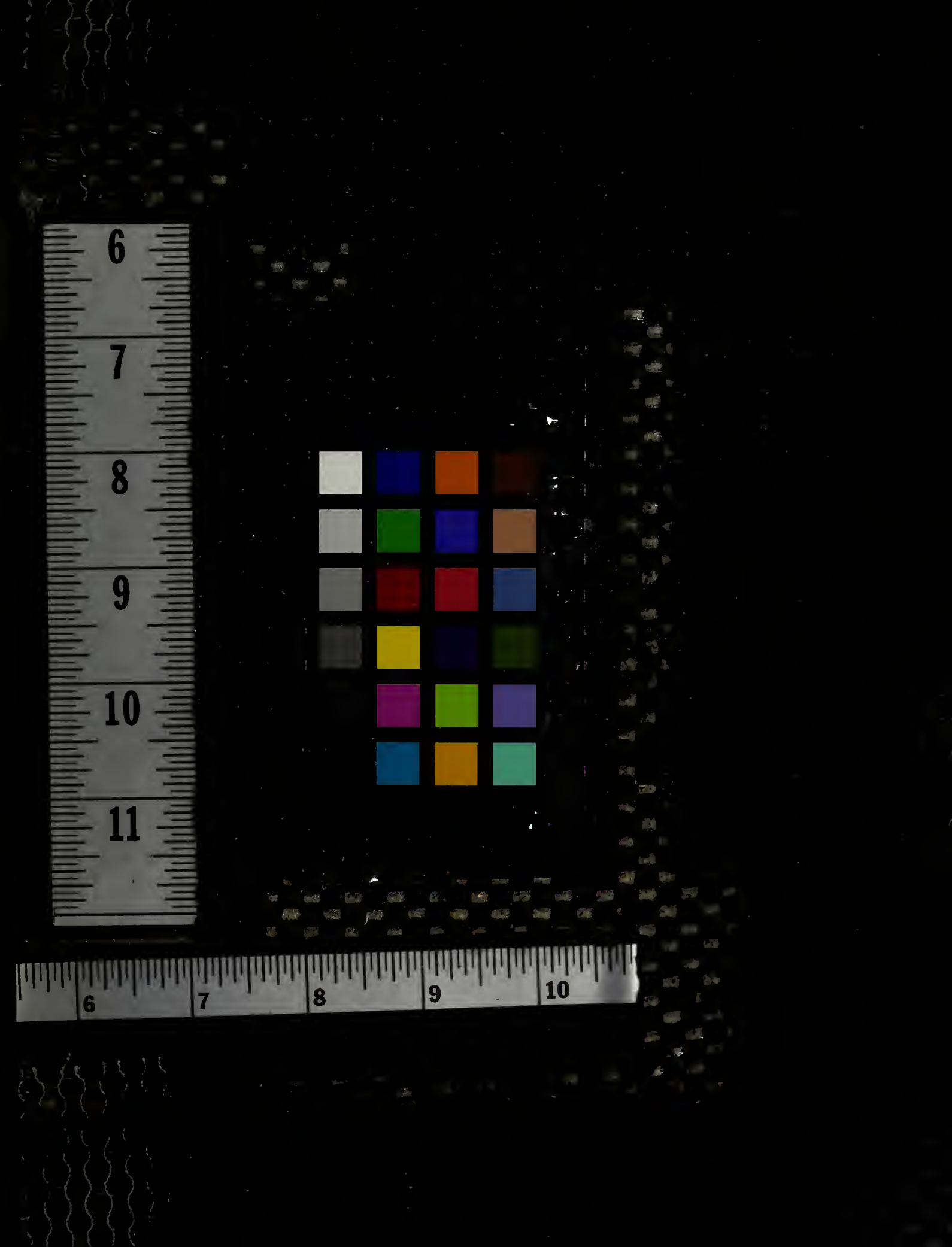
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